



General facts		Source
Surface area (km <sup>2</sup> )	<b>3,287,240</b>	UN DESA
Population	<b>1,224,614,000</b> (2010)	UN DESA
Population density (people/km <sup>2</sup> )	<b>373</b> (2010)	UN DESA
GDP (USD millions)	<b>4,469,763</b> [purchasing power parity (PPP), at current international prices, 2011]	IMF
GDP per person (USD)	<b>3,703</b> [purchasing power parity (PPP), at current international prices, 2011]	IMF

ICT indicators (per 100 people)		Source
Fixed telephone lines	<b>2.87</b> (2010)	ITU
Mobile cellular subscriptions	<b>61.42</b> (2010)	ITU
Internet users	<b>7.5</b> (2010)	ITU
Fixed broadband internet subscribers	<b>0.9</b> (2010)	ITU

## Summary of regulatory authorities

Spectrum management and regulation is the collective responsibility of more than one body in India. There are different bodies handling spectrum licensing, regulation, pricing and the levy of penalties; some bodies have only an advisory role.

- Ministry for Communications and Information Technology (MoCIT):** Under the MoCIT is the **Department of Telecommunications (DoT)**. The DoT houses the **Wireless Planning and Coordination Wing (WPC)** which is in charge of spectrum allocation and licensing. The WPC has three sections: Licensing and Regulation (LR), the New Technology Group (NTG) and the **Standing Advisory Committee on Radio Frequency Allocation (SACFA)**. SACFA is the decision-making authority for allocation of spectrum frequency.
- Telecom Regulatory Authority of India (TRAI):** Makes recommendations to the DoT while the DoT has the actual authority to issue licences. TRAI makes recommendations on spectrum allocation and pricing.
- Empowered Group of Ministers for 3G and Broadband Wireless Access (EGoM)** (ad hoc group): There have been occasions when special committees have been set up to consider and make recommendations relating to spectrum management. The EGoM was set up in 2010 and made decisions on 3G and broadband wireless access spectrum auctions.

## Summary of laws and policies

- Indian Telegraph Act 1885  
[www.trai.gov.in](http://www.trai.gov.in)
- Indian Wireless Telegraphy Act 1933  
[www.dot.gov.in/Acts/wirelessact.htm](http://www.dot.gov.in/Acts/wirelessact.htm)
- Telegraph Wires (Unlawful Possession) Act 1950  
[www.indiankanoon.org/doc/980662](http://www.indiankanoon.org/doc/980662)
- Cable Television Networks (Regulation) Act 1995  
[www.tdsat.nic.in/books/THE%20CABLE%20TELEVISION%20NETWORKS%20\(Regulation\)%20Act.doc](http://www.tdsat.nic.in/books/THE%20CABLE%20TELEVISION%20NETWORKS%20(Regulation)%20Act.doc)
- Telecom Regulatory Authority of India Act 1997
- Telecom Regulatory Authority of India (Amendment) Act 2000
- New Telecom Policy 1999
- Cable Television Networks (Regulation) Amendment Act 2002
- Broadband Policy 2004
- Cable Television Networks (Regulation) Amendment Act 2011
- Consultation Paper on Overall Spectrum Management and Review of License Terms and Conditions
- Consultation Paper on Auction of Spectrum, 2012
- Pre-Consultation Paper on IMT-Advanced (4G) Mobile Wireless Broadband Services, 2010
- Consultation Paper on IMT-Advanced Mobile Wireless Broadband Services, 2011
- Pre-Consultation on «Allocation of Spectrum in 2G band in 22 Service Areas by Auction», 2012
- Consultation Paper on «Allocation of Spectrum Resources for Residential and Enterprise Intra-telecommunication Requirements/ Cordless Telecommunications System (CTS)»
- Draft Guidelines for Unified Licensing Regime for Consultations with the Stakeholders, 2012

## Methods for allocation of frequencies

Spectrum assignment in India was initially done by bundling a band of spectrum with the franchise licence for a service (for example, GSM 900). Additional assignments were at the discretion of the DoT on a case-by-case basis. The DoT also issued additional licences. While more spectrum was also auctioned to Global System for Mobile Communications (GSM) operators, a plethora of operators in each geographical area has resulted in a shortage of spectrum. The DoT instituted a system of assignment in 2002 based on the number of subscribers, which is currently in effect for 2G services. Operators can receive additional spectrum as their

subscribers grow. Spectrum usage is capped in certain instances: for example, the total spectrum which a 2G operator can hold is linked to the technology it uses, on the basis of the supposed spectrum efficiency of that technology.

The TRAI's recommendations state that all spectrum is to be auctioned. However, in 2007, the DoT assigned spectrum to the first five comers for 2G services and this is now being contested in court. The government conducted the first auction of 3G and BWA spectrum in May 2010.

## Spectrum with the potential for increasing internet access

Frequencies	Current situation	Potential use
2.1 GHz and 2.3 GHz	Spectrum was recently auctioned in 2010. New entrants have obligations to cover underserved areas.	3G broadband is now being offered in this band.
2.5-2.7 GHz	This band has been used in India for satellite-based mobile and broadcasting applications, such as for national emergencies and natural disasters. Now the government is planning to free 2.5 GHz spectrum for WiMAX.	WiMAX.
5.15-5.35 GHz and 5.725-5.775 GHz	Spectrum in these bands is unlicensed and free to users for indoor use only. A report suggests that these bands should also be licensed for outdoor use.	Wireless local area networks, metropolitan access networks, wireless ISPs.